

#### REMARKS

Applicants respectfully request favorable reconsideration of this application, as amended.

With reference to page 2 of the Office Action, the Examiner's assertion that Foreign Patent Document JP-05-75133 was submitted without explanation or translation is not understood. As was pointed out in the Information Disclosure Statement submitted November 26, 2003, JP-05-75133 was cited and discussed in the specification. See page 23. Note also that a typographical error in the citation of JP-05-75133 on page 23 was corrected by the Preliminary Amendment dated November 26, 2003.

In relation to JP '133, the Office Action further discusses USP 6,867,455 to Applicants' alleged colleagues. The '455 patent and the instant application are indeed commonly assigned as pointed out by the Examiner. However, it is noted that the priority applications underlying the '455 patent were not filed by the present Assignee, but were filed by a different company, a division of which subsequently merged into the present Assignee.

Applicants also note that the '455 patent has not been cited on the corresponding Form PTO-892 and is thus not formally of record in the instant application. Applicants respectfully request that the Examiner confirm that '455

patent is to be made of record by including it on a Form PTO-892 with the next official communication.

Applicants further fail to understand the Examiner's characterization of Applicants' arguments creating the impression "that Applicants have pioneered the use of each every [sic] element of Applicants' rather lengthy claims." Applicants' arguments merely pointed out that the cited Eitan patent fails to teach silicon nitride dots.

Turning to the present claims, and without acceding to the outstanding rejections, Claims 1, 20, and 29 have been amended to overcome the rejections under 35 U.S.C. § 112, first paragraph, and Claims 1, 5, 10, 14, 19, 20, 24, and 29 have been amended to recite additional features. Claims 3, 4, 6, 8, 12, 15, 17, 22, 23, 25, 27, 30-42, and 44 have been canceled without prejudice or disclaimer. Claims 7, 16, 26, and 43 have been amended to change dependency in view of the cancellation of claims and to incorporate features of the canceled claims. Thus, Claims 1, 2, 5, 7, 9-11, 13, 14, 16, 18-21, 24, 26, 28, 29, 43, and 45 are pending, with Claims 1, 5, 10, 14, 19, 20, 24, and 29 being independent.

Each independent claim has been amended to include subject matter originally presented in Claims 8, 17, 27 and 44 - in particular, that surface portions of the silicon nitride dots are higher in nitrogen concentration than

central portions of the silicon nitride dots. Claims 8, 17, and 44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohba et al. (US Patent Application Publication 2002/0140023) in view of Shimizu et al. (USP 5,060,034). Claim 27 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang (USP 5,408,115) and Ohba in view of Shimizu et al. As the pending claims incorporate features originally presented in Claims 8, 17, 27, and 44, Applicants address these references in more detail below.

The Office Action relies on Ohba et al. and/or Chang for teaching the claimed nonvolatile semiconductor memory device, except for the feature of surface portions of the silicon nitride dots being higher in nitrogen concentration than central portions of the silicon nitride dots. The Office Action further relies on Shimizu et al. for allegedly teaching plasma nitriding a nitride charge-trapping region and asserts that the plasma nitriding process would inherently produce the claimed nitrogen concentration in the silicon dots, based on Applicants' disclosure. While the Examiner has correctly observed that the nitriding of area 22B of the insulating film results in a smaller Si/N composition ratio (although,  $\text{Si}_{.43}\text{N}_{.57}$  as disclosed in Applicants' specification has a Si/N ratio of 0.75, not 0.85 to 1.1 as noted in the Office Action) and loses its

hysteresis characteristic, Applicants respectfully observe that area 22B is associated with transistor T22, i.e., the select transistor, not the memory transistor. As is further apparent from Shimizu et al., it is the hysteresis that gives the silicon nitride layer its charge trapping properties for use in a TFT memory device (col. 3, lines 29-63). Thus, Shimizu et al. do not teach plasma nitriding of a nitride charge-trapping region. In fact, the disclosure of Shimizu et al. would be seen to suggest that such a treatment would adversely affect the charge-trapping ability of a silicon nitride region by reducing or removing hysteresis. Accordingly, regardless of whether plasma nitriding of a silicon nitride dot would inherently result in the claimed nitrogen concentration of the surface and the center of the silicon nitride dot, one of ordinary skill would not have been inclined to subject a nitride charge-trapping region to a plasma nitriding treatment based on Shimizu et al. for at least the reasons discussed above.

Accordingly, it is respectfully requested that the outstanding rejections be withdrawn in view of the amendments and remarks herein.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 (XA-10000) any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper

and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

By: /Frederick F. Rosenberger/  
Mitchell W. Shapiro  
Reg. No. 31,568

Miles & Stockbridge, P.C.  
1751 Pinnacle Drive  
Suite 500  
McLean, Virginia 22102-3833  
(703) 903-9000

Frederick F. Rosenberger  
Reg. No. 61,404

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